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(54) **Title:** READOUT ORDERING IN COLLECTION OF RADIAL MAGNETIC RESONANCE IMAGING DATA

(57) **Abstract:** In a magnetic resonance imaging apparatus, a sensor (120, 122, 124, 126, 130) measures a displacement of a feature of interest. A magnetic resonance imaging scanner (10) acquires radial readout lines of magnetic resonance imaging data. A reconstruction processor (58) reconstructs the acquired readout lines into reconstructed image data. A coordinating processor (134, 140) coordinates a direction of a radial readout line with the determined displacement. The coordinating processor (134, 140) biases at least one of the magnetic resonance imaging scanner (10) and the reconstruction processor (58) toward a selected relationship between readout magnetic field gradient direction and the determined displacement of the feature of interest.

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